

REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Claims 1-12 are pending in the application.

Claims 1 and 7-8 have been amended.

Claims 1-5 and 8-12 have been rejected under 35 U.S.C. 102(b) as being anticipated by Nishizato et al. (USPN 5,440,887). Applicant respectfully traverses this rejection.

The Examiner refers to a valve body 7a, disclosed by Nishizato et al., as corresponding to the valve body 70 as claimed in claims 1-5 and 8-12 of the present invention. This is incorrect. As Nishizato et al. disclose in the specification (column 5, lines 12-20), the valve body 7a is part of a flow rate control valve 7 which controls the amount of liquid flowing through a throughhole 23 (interpreted as a liquid storing chamber by the Examiner) by adjustment of the size of an inlet opening with a piezo-actuator or solenoid actuator. The valve body 7a, however, does not have the function or capability of completely closing and/or opening the inlet opening of the throughhole 23.

In contrast, the valve body 70 of the present invention serves to completely open and close the inlet opening 68 of a small aperture 66 connected to a liquid storing chamber 62. Claim 1 has been amended to emphasize this feature, supported in the specification, for example, on page 11, line 19.

Further, the valve body 70 of the present invention is disposed within the liquid storing chamber 62. If the Examiner's interpretation of Nishizato's disclosed throughhole 23 as a liquid storing chamber is accepted, then Nishizato's valve body 7a is disposed outside of the liquid storing chamber, further differentiating the present invention from the apparatus disclosed by Nishizato et al.

Finally, regarding claim 8, the Examiner asserts that Fig. 5 of Nishizato et al. indicates that the carrier gas is injected in a direction substantially opposite to the direction of the liquid discharge. This is incorrect. Fig. 5 clearly illustrates the carrier gas being injected in a direction (horizontally from left to right) which is substantially perpendicular to the direction (vertically upward) of the liquid discharge. Nishizato et al., thus, does not disclose, as claimed by claim 8 of the present invention, that "a direction of discharge of the liquid material from an outlet port of the small aperture coincide with a direction of an exit of the vaporizing chamber".

Claims 1-5 and 8-12, therefore, contain features which are neither disclosed or suggested by Nishizato et al., and are now in form for allowance. Applicants respectfully request, thus, that the rejection of claims 1-5 and 8-12 under 35 U.S.C. 102(b) be withdrawn.

Claims 1, 6, and 9-12 have been rejected under 35 U.S.C. 102(b) as being anticipated by Miyamoto et al. (USPN 5,630,878). Applicant respectfully traverses this rejection.

The Examiner interprets the opening 19 of the apparatus disclosed by Miyamoto et al. as corresponding to the liquid storing chamber 62 of the present invention. If that interpretation is accepted, then Miyamoto et al. do not disclose a small aperture which connects a liquid storing chamber and a vaporizing chamber, as claimed by claims 1, 6, and 9-12 of the present invention. Miyamoto et al. disclose a liquid material inlet passage 15 which the Examiner interprets as corresponding to the small aperture of the present invention, but the liquid material inlet passage 15 does not connect a liquid storing chamber and a vaporizing chamber as configured in the present invention.

Further, regarding claim 6 of the present invention, Miyamoto et al. do not disclose a bellows 35 as the Examiner asserts, but rather a spring 35 (column 7, line 63).

Claims 1, 6, and 9-12, therefore, contain features not disclosed or suggested by Miyamoto et al., and are now in form for allowance. Applicants respectfully request, thus, that the rejection of claim 1, 6, and 9-12 be withdrawn.

Claim 7 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al. in view of Yuuki et al. (USPN 5,630,878). Applicant respectfully traverses this rejection.

As explained above, claim 7 contains features not disclosed or suggested by Miyamoto et al. The vaporizing chamber disclosed by Yuuki et al. does not disclose or suggest the apparatus features claimed by claim 7/1. The combination of Miyamoto et al. and Yuuki et al., therefore, would not allow one of ordinary skill in the art to arrive at the present invention.

Claim 7, thus, is in form for allowance. Applicant respectfully requests, therefore, that the rejection of claim 7 under 35 U.S.C. 103(a) be withdrawn.

Finally, claims 7 and 8 have been amended to correct typographical errors.

CONCLUSION

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Attached is a marked-up version of the changes made to the claims by the current amendment. The attached Appendix is captioned "Version with markings to show changes made".

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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Enclosure: Appendix

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1 is amended as follows:

1. (Amended) A vaporizer which vaporizes a liquid material under a depressurized atmosphere, the vaporizer comprising:

a liquid storing chamber temporarily storing the liquid material therein;

a vaporizing chamber set in the depressurized atmosphere;

a small aperture connecting between the liquid storing chamber and the vaporizing chamber so as to supply the liquid material to the vaporizing chamber;

a valve body [which opens and closes] located in the liquid storing chamber so as to open and close an inlet port of the liquid storing chamber on a side of the liquid storing chamber; and

an actuator controlling a degree of opening of the valve body.

7. (Amended) The vaporizer as claimed in claim 1, wherein the vaporizing chamber [is] has a conical shape so that a cross section of the vaporizing chamber increases as a distance from the small aperture increases.

8. (Amended) The vaporizer as claimed in claim 1, wherein a direction of discharge of the liquid material from an outlet port of the small aperture coincides with a direction of an exit of the vaporizing chamber.

End of Appendix